DOCUMENT RESUME

ED 121 069 FL 007 532

AUTHOR Duchan, Judith; Oliva, Joseph
TITLE The Relationship between Intonation and Syntax in Normal and Abnormal Speakers.
PUB DATE Nov 75
NOTE 5p.; Paper presented at the Convention of the American Speech and Hearing Association (Washington, D.C., November, 1975)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS *Child Language; *Intonation; *Language Development; Language Handicaps; Language Patterns; Language Research; Morphology (Languages); *Retarded Speech Development; Semantics; Suprasegmentals; *Syntax

ABSTRACT

This paper is a report of two studies of the relationship between intonation and syntax. An analysis of intonation was used to decide whether the pivot-like two-morpheme constructions of a one- and one-half-year-old girl were single lexical items or two separate lexical items. Further, the intonation contours connected with her linguistically diverse open-open constructions were highly similar, suggesting the inadequacy of semantic relations and syntactic constructs in explaining the developmental stage. Finally, a comparative study of the intonation of the same child at two years of age and an abnormal speaker, a fifteen-year-old boy, pointed to differences in their syntactic capabilities that were not obvious from a syntactic analysis. (Author)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED121069

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

STATE UNIVERSITY COLLEGE AT BUFFALO
EXCEPTIONAL CHILDREN EDUCATION DIVISION

THE RELATIONSHIP BETWEEN INTONATION AND SYNTAX IN NORMAL AND ABNORMAL SPEAKERS

ASHA PAPER, 1975. Judith Duchan and Joseph Oliva, State University College at Buffalo.

This paper is a report of two studies of the relationship between intonation and syntax. The first is a developmental study of changes in intonation and syntax of a 1 1/2 year old named Laura. The second is a comparative study between Laura at 2 years and an abnormal 15 year old teenager.

For the developmental study, transcripts were made of two one-hour tapes with Laura in natural interactions with her three-year-old sister, Jenny, or with familiar adults. The tapes were made in Laura's home. The first tape was filmed two weeks before the second, and showed Laura speaking in single or multiple syllable utterances. A morphemic analysis of Witz and Duchan in 1972 revealed that the longer utterances were usually comprised of one morpheme from a small group of eight possible morphemes and another morpheme from a less frequent group of morphemes. In most cases, the frequently occurring morpheme was in first position and the less frequent was in final position. Witz and Duchan likened Laura's utterances to a prefix-base construction, implying that the syllables were made up of two or more morphemes which functioned as a single lexical unit, in the same way as the suffix /i/ is bound to the base in lexical items such as doggie and horsie. Other researchers have assumed from similar data that the two-morpheme utterances are comprised of two lexical items, not one with a prefix (Braine, 1963; Miller & Ervin, 1964; McNeill, 1970). The first, and most frequent item from the small class was called the pivot morpheme, and the second, less common and larger class of morphemes were called open class morphemes.

We turned to intonation analysis to answer the syntactic question of whether these early utterances function as two-syllable lexical items, which would be the prefix-base hypothesis, or as two lexical items as in the pivot-open hypothesis. We began with an analysis of two syllable single morpheme units such as baby, or mommy and found that in all cases, except one, both syllables of the morpheme were incorporated under the same intonation pattern. This suggests that in Laura's intonation system, the syllables in a single lexical item tend not to be split into separate intonation patterns. This information about the inseparability of the syllables in a lexical item then can aid us in determining the higher level lexical and syntactic constituent boundaries for Laura. For example, one would expect that if the prefix-base assumption of Witz and Duchan were characteristic of Laura's morpheme combinations, one would find the prefix incorporated under the same intonation pattern as the base, in the same way that the two-syllables of other lexical units were under a single contour.

In the majority of instances (70%) the prefixes were incorporated with the base morpheme under the same intonation pattern. However, in 30% of the instances there were single bar junctures between the first morpheme and the second. This fairly frequent occurrence of single bar junctures, then, supports the psychological reality of the pivot-open formulation over the prefix-base notion.

FL007532

Two weeks later Laura's language appears essentially the same, mostly single and pivot-open constructions. However, there are now 15 utterances which are combinations of two morphemes from the open class. Examples of these new open-open combinations are:

baby-spoon, said at the time she was putting a spoon in the doll's mouth

ikky-baby, said as she reached and failed to pick up a baby's shoe

mommy-see, said when looking outside to see where her mommy went

shoe-hat, referring to a doll whose hat and shoes are removable

In Lois Bloom's analysis of how these open-open constructions emerged in her 1 1/2 year old subjects, she described a period where the children used "two different single word utterances in the same speech event" (Bloom, 1973). To prove the separateness of these successive single word utterances, Bloom turns to intonation. She noted that both the words in the open-open productions have a falling pitch contour, have equal stress, and are separated from one another by a pause.

Intonation analysis of Laura's 15 new open-open utterances reveal a different picture from the children in Bloom's study. Eight of the fifteen combinations were incorporated within a single intonation contour and seven were separated by junctures. Of those seven, two were non-terminal single-bar junctures, indicating that the two words make up a single utterance. Another two of the seven were separated by a terminal juncture but had drawl on the second morpheme resulting in a subordination of the first morpheme to the second--again suggesting a single utterance unit. In one of the separated open-open patterns, the pitch changed from a 3 on the first morpheme to 2 on the second morpheme offering a structural cohesiveness to the two morphemes. In sum, there was only one utterance in Laura's 15 open-open productions which fit Bloom's description of successive single word utterances. This utterance was "Hat. Shoe." and seemed to be a list of different features of a doll she was looking at.

The eight utterances which were incorporated under a single intonation pattern were diverse under the classification systems of Bowerman (1973) and Bloom (1973). While semantically and syntactically diverse, they were startlingly similar in intonation. In all cases, the first lexical item received secondary stress, and the second item received primary stress. Occasionally this violated the adult use of stress as in her production of "shóe hát." Shoe-hat functioned in Laura's language as if it were a compound word for the doll with removable shoes and hat. If this were so, the morphemes should receive primary-tertiary stress, as in our compound word white house. The secondary-primary pattern suggests a modifier-noun relationship which, in this case would be inappropriate since shoe does not modify hat.

This sudden emergence of cohesive open-open constructions, along with identical stress patterns for the eight incorporated utterances at first led us to think that the child's discovery of secondary-primary stress might have led her to produce the new open-open units. However, we subsequently discovered the secondary-primary stress in earlier tapes accompanying her pivot-open constructions.

We now believe that most pivots in pivot-open combinations have as their lexical meaning an action component, such as pointing, showing, or bringing something closer; while the open-open items have a more recently developed cognitive base which requires an elaborate know-

ledge of objects and events. We suggest that these action-based lexical items are more mobile (to use a Piagetian notion) and thereby can be coordinated with other lexical items more easily. We need to do more research to support this cognitive theory for the emergence of open-open constructions. For the present, we simply want to make the point that it was the stress analysis that led us to return to our belief in the psychological reality of the open-open category as opposed to the more diversified semantic or syntactic subclassifications advocated by Bowerman and Bloom.

Six months later Laura's utterances have a totally different syntactic and intonation composition. She now speaks in long utterances and can string utterances together into coherent narrative stories. Our second study is a comparison of Laura's long utterances with those of an abnormal speaker, Joey. The comparison is of the intonation system and how these systems seem to operate with the syntactic system.

What happens, then, to Laura's patterns of incorporation when she strings intonation patterns together in these longer utterances? There are intonation patterns which incorporate full, but short, sentence units made up of subject-verb-complements or verb-complement. There are patterns which incorporate noun phrases which serve as subjects, and those which incorporate prepositional phrases and compound lexical items. There are one or two occurrences of double subject (Sissy I) and verb (gonna put) and negative plus noun phrase which are under a single intonation pattern. Finally, there are a number of partial phrases such as by the or there's a which seem to be false starts and go from the beginning of an utterance to a single bar juncture. Just as in the earlier tapes, syllables of the same lexical items are rarely separated into different intonation patterns. Paralinguistic pauses seldom occur and never occur in places where lexical items such as conjunctions, or cupolas, or auxiliaries are missing.

Laura at this stage uses pitch and stress with versatility. She differentiates the primary-tertiary of compounds, from the secondary-primary of adjective noun relationships. She shows contrastive stress and pitch in utterances such as "That my sissy bag" where she means "oh there it is" rather than saying "that's my sissy bag" which would mean "It's sissy's, not mine".

In over half of Laura's utterances she exhibits rhythmic quality, not unlike the rhythmic patterning of a poem. Existence of isorhythmicity, where stress alternates in sequence across the utterance is not characteristic of adult speech, and we suspect it is this quality that makes Laura sound child-like.

Now what of Joey's utterances, our 15 year old? On the surface, Joey's syntax looks like Laura's. He omits similar lexical items, has about the same MLU, uses the same combination of syntactic units which he incorporates in intonation patterns in ways that are similar to Laura. While the syntax looks the same, when we examined the intonation and paralinguistic patterns, differences appeared. Paralinguistic pauses create big separations between the intonation patterns in Joey's utterances. They are not in close sequence as were Laura's.

Joey doesn't use intonation contrastively, as did Laura. When asked how many uncles he had, he answered, "I have two uncle" stressing uncle rather than the number two. He also used incorrect lexical stress on compound nouns as in his production of air plane for airplane.

In Joey's language, there are a predominance of single bar junctures, often followed by paralinguistic pauses. While Laura's single bars were after the incompleted phrases, indicating false starts and perhaps a change of mind about what she was going to say, Joey's interruptions seem to relate to articulatory problems, lexical selection, or syntactic confusions. That is, Laura's interruptions were cognitive where Joey's were linguistic.

The tendency toward isorhythmic patterning was much greater in Joey than Laura. In fact, there were some indications that the isorhythmic intonation dominated the syntax so that function words were either added or omitted depending upon the rhythmic characteristics of the overall utterance.

Thus, while Joey's syntax seemed comparable to Laura's, his intonation patterns were less adult-like than hers. In addition, his paralinguistic pauses, lack of contrastive pitch and stress, and dependence on isorhythmicity suggested to us that he was having more difficulty producing the utterances than Laura, and that his difficulties were linguistically based.

In sum, we feel from our data that the inclusion of intonation analysis into linguistic analysis provides important insights into other levels of language, and, in particular helps us understand the syntactic capabilities of a speaker.

****

REFERENCES

Bloom, L. One word at a time: The use of single word utterances before syntax. The Hague: Mouton, 1973.

Bowerman, M. Learning to talk: A cross-linguistic comparison of early syntactic development, with special reference to Finnish. London: Cambridge University Press, 1973.

Braine, M.D.S. The ontogeny of English phrase structure: The first phase. Language. 1963, 39, 1-13.

McNeill, D. The acquisition of language. New York: Harper-Row, 1970.

Miller, W., Ervin, S. The development of grammar in Child language. Monographs of the Society for Research in Child Development, 1964, 29, 9-34.

Witz, K., and Duchan, J. Language production in a 1 1/2 year old. Unpublished Manuscript, 1973.